

TARC News

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Publisher, Tom Fuller

Editor Tom Fuller



TARC Election Day



President
Tom Fuller
KN4GLO



Vice President
Barry Kennedy
N4NMF



Secretary Treasurer
Sally Fuller
KN4HPX



Passing the torch of
Vice President
Paul Fee to Barry Ken-
nedy

I've been privileged to serve as the TARC Vice President for the last five years, and the experience has been a very positive and enriching one. I'd like to thank the membership for their trust and support during that time, and I've appreciated all of the advice, counsel, assistance and suggestions that I have received over those years. I hope I did at least an adequate job for the majority of the challenges set before me. I learned a lot from all of you, and will continue to do so in the future. Very special thanks to Jan Ferguson - W4REN for his wisdom, humor, and guidance during my time as his sidekick and partner.

My thanks and congratulations to Barry Kennedy - N4NMF for being unanimously elected to serve as Vice President of TARC for 2023, and I'm sure you will all join me in giving him your full support and able assistance during his tenure. The Navy and Coast Guard have a long history of watching out for each other, so at least we have that going for us.

Looking forward to 2023 and beyond with high hopes and great expectations!

73

Paul - N6YCC

Other Election Results

Board of Directors

Dan Belcher
Paul Fee
Dave McLean
Orville Brown
Don Spade

I want to thank everyone for coming out and participating. We had a great year and the future looks bright with our new officers and new ideas.

Tom KN4GLO President

[Check the New Website](#)

K4KSC.com

Still under construction but coming along nicely
Thanks to Marty Grove for all your hard work

Local Nets

Monday 7 PM 144.210
Net control George WG4ES

Tuesday 7 PM 146.970
Sky Warn
Net control Barry N4NMF

Wednesday 7 PM 28.333 USB
Mosquito
Net control Tom KN4GLO

Thursday 7 PM 146.970
Friendship Traders
Net control Keith KN4AQJ

November Minutes

Our election meeting was called to order at 7PM. The pledge and introductions were said.

The first order of business was the elections.

President Tom Fuller

Vice President Barry Kennedy

Secretary/Treasurer Sally Fuller

Board of directors

Paul Fee

Don Spade

Dave Mclean

Orval Brown

Danny Belcher

Welcome All!!!!

We talked about the electricity at Mims site. We have added air conditioning in the building so we need to up our payment from \$100 a year to \$432. That is \$36 a month. We voted on it and it passed.

Keith DeSoto has taken over the Thursday night net from Danny. Thanks Danny for all the years you have done the net!

It was brought up that there is a winter field day coming up in January and whether anyone was interested. The majority wants to try it so we will be doing it on January 28th and 29th 2023.

The meeting was adjourned and we enjoyed food and friendship.

Sally Fuller KN4HPX

Part 3: Powering my Rig. Batteries, Solar, Magic Potions.

By Roy Merritt / N4RKM

In case you missed my earlier articles, I have now decided on the main rig I want to use, mainly the IC-705 with a backup of my 7300 for portable operations. Now let me talk about powering my radio, the parts and path I chose.

There are two ways to power the Icom IC-705 radio. The radio itself comes standard with a battery attached and once fully charged will give you enough juice to run operations on 5 watts of power for quite some time. Alternatively, like any radio, this one can also be powered from an external power supply such as most any A/C power supply or external battery. With a suitable external power supply, you can expect to be able to transmit the full 10 watts of power that the Icom IC-705 can do.

When I am using the radio from my home QTH, unless I am testing batteries or solar, I always plug my radio into one of my Rigrunner DC distribution ports using Anderson Pole connectors. A note here to say that all my radio kit that require power, use Anderson Pole connectors. The first thing I do when I get any new kit that requires power is to put these connectors on them. It just makes my life so much easier. At my home QTH, I have a number of solid-state DC power supplies with Rigrunner distribution panels. The convenience and ease of use of this type of configuration for the home is magical, at least for me.

Batteries:

So, what do I do if I want to go portable. My choice is a battery. I have read a great deal on batteries over the years in books on batteries (yes, I actually have one or two of them) and I follow discussions on various battery topics on FB forums to get a feel for how I wanted to build my solution. So, what is my selection criteria? Well: 1) the battery has to be lightweight. Maybe something I can carry in a backpack or can easily manhandle into the back of my car. Remember, batteries are heavy buggers! 2) I wanted a battery that could be safely handled and did not need to be constantly set in an upright position so dangerous chemicals wouldn't spill out.

From the above criteria, this leaves one of three choices, and they are: 1) AGM, 2) Gel or 3) Lithium. I chose Lithium! I chose Lithium mainly because: 1) you get more bang for your buck on power output per battery weight and size, 2) it is much lighter than either an AGM or Gel of similar size and performance and finally safer to handle and can be mounted in any position needed. Ok, I know AGM and Gel can also be mounted in most any position too, but, trust me, the Lithium battery is just so much lighter than an AGM or Gel battery that puts out the same amperage and Lithium batteries do not outgas, something that an over charged AGM or Gel battery can do.

Here is where we are now. At home, I use my home DC power distribution network. If I go portable, I use a Lithium battery. The Lithium battery I have chosen to use is the Bioenno 20-amp hour battery pictured below:



Figure 1 Bioenno 20-amp Lithium battery with distribution box and 4-amp A/C charger.

This is more than enough to meet my meager operating needs. Having said that, if I want to go even longer, I do have a 40-amp hour Bioenno Lithium battery too, pictured below:



Figure 2 Bioenno 40-amp Lithium Battery in the PowerWerx battery box.

This is also enough to power up my 7300 in the field for a number of hours of use. There is also enough juice in the 20-amp hour battery to charge my cell phone and Microsoft Surface Pro 3 tablet.

At some point, however, like any battery, they will run out of juice and need to be recharged. Again, there is more than one way to do this. When I am near an A/C outlet, I connect my battery to my Lithium battery charger. In the field I connect to one of my portable solar panels. I should note here that not just any charger can be used to charge Lithium batteries. Lithium batteries typically require a higher charge voltage (CV) than an AGM or Gel battery. Typically, the Lithium battery requires 14.6V to charge vs. 14.2 to 14.4V to charge an AGM or Gel battery. For my 20-amp hour battery I have a 4-amp charger and for my 40-amp hour battery I have a 6-amp charger.

Going Solar:

When in the field, unless I am near a convenient A/C power source, the only option I have is to use a solar source to charge my battery. I have a rollable solar panel from PowerFilm and I have a new foldable panel I am testing, from PowerWerx. The PowerFilm rollable panel provides 60 watts with output stat-

ed to be: 15V @ 3.9 amps output while the PowerWerx foldable panel provides 160 wats with output stated to be: 27.8V @ 5.7 amps and is shown below:



Figure 3 PowerWerx 160-watt foldable solar panels.

Having a solar panel isn't simply enough though, you must also have a controller. You simply cannot connect a solar panel to your battery and have it magically charged; it just doesn't work that way. That magic takes place in a charge controller. In the case of solar, I chose to use the **Maximum Power Point Tracking (MPPT)** type controller. This is the only kind you should use. It is beyond the scope of this article to explain what MPPT is, but suffice it to say, this is the type controller you should use in this instance. Google MPPT to learn more about MPPT controllers.



Figure 4 MPPT solar charger on the left is used to manage the PowerFilm 60w rollable panel and the controller on the right manages charging using the PowerWerx 160w panels.

To find the right size MPPT controller, you must know your solar panels output voltage and current and what the maximum input voltage is on your controller. One other thing to consider when choosing the right MPPT controller is portability and more importantly the amount of RFI it will generate.

As an example, the Victron MPPT controllers are great controllers, as long as you don't have them anywhere near any radio gear, they are known to radiate a lot of RFI. I am working with two controllers, one for the PowerFilm panel (BTW, testing by others show the PowerFilm controller is noisy – I did not buy this one) and the second controller is matched to the PowerWerx solar panel and Bioenno Lithium battery. I have yet to test the RFI noise level on either MPPT controller, so I may have a follow-up article once testing has been completed. I just mentioned that the MPPT controller I bought for the PowerWerx solar panel was matched to the battery. That means the controller has already been configured to provide the correct output charge voltage of 14.6V which the battery requires. The controller I bought for the PowerFilm solar panel allows me to configure the charge output voltage which I have set to 14.6V. Its default was 14.2V, more suitable for an AGM or Gel battery.

What about power distribution when portable? When portable I wanted the flexibility to be able to not only power my radio, but charge my cell phone and Microsoft Surface Pro 3 tablet (or Dell laptop) also. For the 20-amp hour battery, I built a small distribution box that gives me a readout of the current battery voltage and provides: 1) a cigarette lighter type connector; 2) 2 x Anderson Pole connectors and 3) both USB 'B' and 'C' ports for charging. See figure below:



Figure 5 Homebrew power distribution box I use with the Bioenno 20-amp Lithium battery.

I have a cigarette type charger for both my Surface Pro 3 and Dell Laptop hence the inclusion of the cigarette charge port. For the 40-amp hour battery, the battery is contained in their own specially made battery box I purchased from PowerWerx which provides the same functionality as the box I built for the much smaller 20-amp hour battery (see figure 6.)



Figure 6 PowerWerx battery box with built in connection points and battery voltage readout.

So, there you have it. To recap, when I am at home, I use my home DC distribution network for the radio and I charge my Lithium batteries with a properly matched charger. When portable, I use a battery and I have a choice of solar panels to use along with an appropriate MPPT controller to keep the battery charged.

In my next installment, I will discuss Antennas and my choices for antennas. Until then, 73 to all.

Christmas gift exchange

This year we are asking everyone to bring 1 gift for each person that are attending. Please don't spend anymore than \$20.00 max per gift we don't want to cause any financial hardships with anyone. Don't let the gift detour you from coming we will have extras so everyone gets something. The gift does not have to be Radio related.

Name Tags

Barry Kennedy
N4NMF is taking
orders for name
tags. These are
very nice and come
in several different
designs.
Contact Barry at
n4nmf@outlook.com



Christmas Party

December 15 / 2022
Dixie Crossroads
6PM
Contact Sally KN4HPX 309-314-2303
For tickets

DECEMBER 2022

Sun	Mon	Tue	Wed	Thu	Fri	Sat
		Sky Warn Net 7pm 146.97	Mosquito Net 7pm 28.333	1 Friendship Traders Net 7pm 146.97 Eating Meeting	2	3
4	5	6 Sky Warn Net 7pm 146.97	7 Mosquito Net 7pm 28.333	8 Friendship Traders Net 7pm 146.97 Eating Meeting 5pm	9	10
11	12	13 Sky Warn Net 7pm 146.97	14 Mosquito Net 7pm 28.333	15 Christmas Party Dixie Cross- roads 6pm	16	17
18	19	20 Sky Warn Net 7pm 146.97	21 Mosquito Net 7pm 28.333	22 Friendship Traders Net 7pm 146.97 Eating Meeting 5pm	23	24
25	26	27 Sky Warn Net 7pm 146.97	28 Mosquito Net 7pm 28.333	29 Friendship Traders Net 7pm Eating Meeting 5pm	30	31